

REMARKS/ARGUMENTS

This amendment is responsive to the Office Action dated June 29, 2005. Claims 1-25 have been elected for prosecution, of which Claims 1 and 11 are independent. The drawings have been objected to under 37 CFR 1.83(a). Claims 11-25 are rejected under 35 U.S.C. § 112, second paragraph. Claims 1 and 4-7 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,859,128 to Brecz. Claims 1, 4, 7, and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,478,543 to Lyon in view of U.S. Patent No. 5,098,240 to Gapp. Claims 2, 5, 6, 9, and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lyon in view of Gapp and further in view of U.S. Patent No. 4,457,652 to Pratt. Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lyon in view of Gapp and further in view of U.S. Patent No. 6,499,926 to Keener.

Drawings

Applicant first addresses the objection and remarks relating to the drawings. The Office Action states that the plastic composite of the sleeve should be shown by different cross-hatching. Accordingly, Applicant is submitting herewith replacement drawings, in which the material of the sleeve is shown with a different cross-hatching. The Office Action also states that the sleeve recited in claim 15 must be shown in the drawings or cancelled from the claim. Applicant respectfully submits that the sleeve is shown, both in the original and replacement drawings. In this regard, Applicant directs the Examiner's attention to page 6, lines 20-21 of the application, which states that "As shown in Figure 1, the fastener 10 includes a sleeve 12 and a stem 30." Accordingly, reference numeral 12 indicates a sleeve in Figure 1. As set forth in Claim 1, the sleeve 12 of Figure 1 is formed of a composite material, defines first and second sides 18, 20, a head portion 22 (i.e., a "second head" as recited in Claim 1) at the second side 20, and an aperture 16 extending between the first and second sides 18, 20. The head portion 22 has a cross-sectional dimension greater than a cross-sectional dimension of an aperture 54 that

extends through structural members **50, 52**. As each of the claimed elements is illustrated in the drawings, Applicant submits that no further amendment to the drawings is required.

Rejections under 35 U.S.C. § 112, second paragraph

Regarding the rejection of Claims 11-25 under 35 U.S.C. § 112, second paragraph, the Office Action indicates that it is unclear how the second head can have any “blind adjustment” since it remains fixed in location. The term “blind” is defined in the application to refer to an adjustment or installation in which the fastener is adjusted from a single side of the structural members in which the fastener is disposed. For example, as stated on page 10, lines 25-31 in the application, “the stem **30** can be screwed into the sleeve **12**, as shown in Figure 2, and the fastener **10** can then be inserted into the aperture **54** of the structural members **50, 52** from the first side **56** of the structural members **50, 52**. Thereafter, the tool **60** can be used to deform the head **38** of the stem **30** from the first side **56** of the structural members **50, 52**. Thus, the head **38** of the stem **30** is deformed and the structural members **50, 52** are fastened without requiring access to the second side **58** of the structural members **50, 52**.” As for the term adjustment, Claim 11 has been amended to clarify that the adjustment is a “blind relative adjustment between the second head and the shank at the first side of the structural members.” That is, the second head and the shank are adjusted relative to one another as set forth in the application. *See* page 9, lines 20-26. In other words, the second head and the shank are rotated relative to one another, as described above, though either of the two members can remain stationary as the other member is rotated. The relative adjustment between the two members is performed from a single side, i.e., blindly.

Applicant submits that Claim 11 as amended is not unclear, and therefore requests withdrawal of the rejection under § 112.

Rejections under 35 U.S.C. § 102

Applicant now addresses the rejection of Claims 1 and 4-7 under § 102 as being anticipated by Brecz, et al. As amended, Claim 1, which is directed to a composite-metallic hybrid fastener, includes “a metallic stem defining a shank extending between first and second ends, the stem defining an integrated deformable first head at the first end of the shank.” The metallic stem is used in combination with a composite sleeve that defines a second head. Thus, according to Claim 1, the stem is made of metal and defines both a shank and the deformable first head, which is integral with the stem at the end of the shank. Brecz, et al., on the other hand, describes a mandrel 18 with an anvil 20 at one end and, separately, a cylindrical sheath 34 having a thin-walled section 37. The Office Action indicates that the mandrel 18 and the thin-walled section 37 of Brecz, et al. correspond, respectively, to the metallic stem and the deformable first head of Claim 1. Applicant respectfully disagrees. Claim 1 requires that the stem defines a shank and an integrated deformable head at one end of the shank. Brecz, et al. does not teach or suggest that the thin-walled section 37 is defined by the mandrel 18. In contrast, Brecz, et al. specifically discloses that the thin-walled section 37 and mandrel 18 are separate components. Accordingly, Claim 1 is not anticipated by Brecz, et al.

Further, it would not have been obvious to modify the device of Brecz, et al. to arrive at the present invention of Claim 1. In this regard, the importance of the separation of the thin-walled section 37 and mandrel 18 is shown in Figure 3 of Brecz, et al., wherein the “sheath is initially expanded radially along a thin-walled portion thereof during blind head formation by the hydrostatic pressure generated by axial compression of the rivet’s composite core.” Abstract. That is, as shown in Figure 3, the thin-walled section 37 and mandrel 18 do not initially make contact, such that the initiation of the expansion of the thin-walled section 37 is achieved by expansion of the preform 11, not by contact between the thin-walled section 37 and mandrel 18. Given the separation of the thin-walled section 37 and mandrel 18, and the specific purpose for such separation in light of the teaching of Brecz, et al., it would not have been obvious for the thin-walled section 37 to be defined by or integrated with the mandrel 18.

Therefore, Applicant respectfully submits that Claim 1 is allowable over Brecz, et al., as are each of the dependent Claims 4-7 and new Claims 38-40. Similarly, Brecz, et al. fails to disclose a composite-metal hybrid fastener with two heads that are connected to the shank, as recited in independent Claim 11, and, therefore, Claims 11-25 and 41-43 are allowable for similar reasons.

Rejections under 35 U.S.C. § 103

Applicant now addresses the rejection of Claim 1 as being unpatentable over Lyon in view of Gapp, and various dependent claims as being unpatentable over the Lyon and Gapp (with Pratt or Keener for some of the dependent claims).

As set forth above, Claim 1 is directed to a composite-metallic hybrid fastener that includes (a) a metallic stem defining a shank and an integrated deformable head at one end of the shank and (b) a composite sleeve. Like Brecz, et al., described above, Lyon does not disclose a metallic stem having a shank and a deformable head that is integrated with the shank. To the contrary, the mandrel 58 and the “B” stage thermoset resin head forming portion 62 (which are indicated in the Office Action to correspond to the claimed stem and deformable head) are two separate parts that are not defined by a common stem as claimed. In fact, Lyon teaches that the head forming portion 62 is formed of a “B” stage thermoset resin that can be softened by heating, not of metal or as a part of any metal stem.

Moreover, Lyon fails to disclose the claimed invention of a hybrid fastener that includes a metallic stem defining an integrated deformable head and a composite sleeve that defines a second head. Neither the claimed configuration nor the significance of such a configuration (which is described in the present application at page 2, line 30 – page 3, line 10 and page 11, line 22 – page 12, line 20) is taught or suggested by any of the cited references, alone or in combination. In other words, even if Lyon were modified as set forth in the Office Action, the resulting structure would not satisfy each of the elements of Claim 1. For the same reasons, the cited references also fail to teach or suggest a composite-metal hybrid fastener having two heads

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that are connected to a shank, as recited in independent Claim 11, and, therefore, Claims 11-25 and 41-43 are allowable for similar reasons.

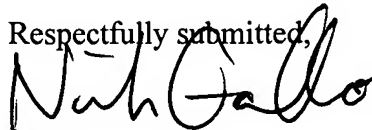
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CONCLUSION

In view of the amendments and remarks made above, Applicants submit that the pending Claims 1-25 and 38-43 are now in condition for allowance. Applicants respectfully request that the claims be allowed to issue. If the Examiner wishes to discuss the application or the comments herein, the Examiner is urged to contact the undersigned by telephone.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

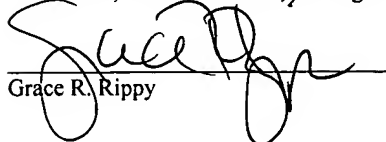


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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450, on August 16, 2005.


Grace R. Rippy

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Amendments to the Drawings:

The attached two sheets of drawings include changes to Figures 2, 3, 5, and 6. These sheets, which include all of the Figures 1-6, replace the original sheets including Figures 1-6. In Figures 2, 3, 5, and 6, the cross-hatching has been modified.

Attachment: Replacement Sheets (2)